

# Preparation

## Student Group

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# Preparation

## Do math right

- calculate fractions in fractions correct: 
$$\begin{aligned} \frac{\frac{A}{B}}{C} &\neq \frac{A}{\frac{B}{C}} \\ \frac{\frac{A}{\frac{B}{C}}}{D} &= \frac{A}{\frac{B}{C} \cdot D} \\ \frac{\frac{A}{\frac{B}{C}}}{D} &= \frac{A \cdot C}{B \cdot D} \end{aligned}$$
- Rearrange fractions correct: based on  $\beta = \frac{I_C}{I_B}$  on **cannot** derive  $I_B = \frac{\beta}{I_C}$ .

## Do physics right

- Check the units. e.g.  $\text{dB}$  cannot be converted in  $\text{V}$
- Prove you (mis)conceptions on impedances
  - Check whether  $Z$  or  $\underline{Z}$  is needed in formulas:  $Z \neq \underline{Z}$
  - impedances are not (only) resistors, at least do not think of  $R$  is given as  $\underline{Z}$ .
  - For purely ohmic components the other way around is correct:  $\underline{Z} = R$ .
  - However, impedances 'act' like ohmic resistors in formulars.  
E.g. for the series circuit:  $R_{\text{eq}} = R_1 + R_2 + R_3 + \dots \rightarrow \underline{Z}_{\text{eq}} = \underline{Z}_1 + \underline{Z}_2 + \underline{Z}_3 + \dots$

## Do exam right

- Do not miss out questions. Sometimes there is more than one answer required

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